

CLAIMS

What is claimed is:

1. A method of using a metered size press to producing a coated paper suitable for rotogravure printing that comprises steps of:

- 5           (a) Preparing an aqueous coating formulation comprising: (i) water, (ii) a first pigment having a shape factor of greater than about 15 or mixture thereof with one or more second pigments having a shape factor equal to or less than about 15 and having a pigment particle size distribution wherein at least about 80% by weight of the pigment particles have an equivalent spherical diameter of less than 2 microns, and (iii) a polymeric binder;
- 10           (b) Using a metered size press to apply the aqueous coating formulation to one or both surfaces of a paper substrate having Gurley Porosity of from about 20 sec/ 100 ml to about 60 sec/100 ml;
- (c) Drying the coated paper to a moisture level of less than about 9%; and
- (d) Calendering the dried coated paper to form a form a dried calendered paper having 15 a smoothness (Parker at 10 kgf/cm<sup>2</sup>, microns) value equal to or less than 1.5 and a Heliotest (mm) value equal to or greater than about 89.
2. The method of claim 1, wherein, the pigments comprising the pigment mixture have an shape factor of about 1:15 to 1:80.
3. The method of claim 1, wherein the aqueous coating formulation has a solids 20 content of about 50% to 65% by weight.
4. The method of claim 1, wherein the weight of the coating on a side of the paper is about 7 grams per square meter.
5. The method of claim 1, wherein the aqueous coating formulation further comprises a lubricant.
- 25           6. The method of claim 1, wherein the aqueous coating formulation further comprises a thickener.
7. The method of claim 1, wherein the aqueous coating formulation further comprises a coating structure builder.
8. The method of claim 1, wherein the aqueous coating formulation further comprises 30 a release agent.
9. The method of claim 1, wherein the metered size press applies the aqueous coating formulation to the paper at a speed of about 1500 meters per minute.
10. A coated paper suitable for use in rotogravure printing, the paper comprising:
- (a) A paper substrate having a Gurley Porosity of from about 20 sec/ 100 ml to about

60 sec/100 ml and

(b) A coating on at least one side of said paper substrate, said coating comprising (i) Preparing an aqueous coating formulation comprising: (i) water, (ii) a first pigment having a shape factor of greater than about 15 or about 17 or mixture thereof with one of more second 5 pigments having a shape factor less than that of the first clay pigment and equal to or less than about 15 to about 17 and having a pigment particle size distribution wherein at least about 80%, and (ii) a polymeric binder,

Said paper having a smoothness (Parker at 10 kgf/cm<sup>2</sup>, microns) value equal to or less than about 1.5 and a Heliotest (mm) value equal to or greater than about 80.

10 11. An aqueous coating formulation comprising: (i) water, (ii) Preparing an aqueous coating formulation comprising: (i) water, (ii) a first pigment having a shape factor of greater than about 15 or about 17 or mixture thereof with one of more second pigments having a shape factor less than that of the first clay pigment and equal to or less than about 15 to about 17 and having a pigment particle size distribution wherein at least about 80%, and (ii) a polymeric 15 binder.